

IN THE CLAIMS

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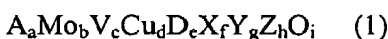
Claim 1 (Previously Presented): A process for producing a catalyst, which comprises dispersing, in water, a used catalyst containing at least molybdenum, an A element (at least one element selected from the group consisting of phosphorus and arsenic) and an X element (at least one element selected from the group consisting of potassium, rubidium and cesium), adding thereto an alkali metal compound and/or ammonia solution so as to adjust the resulting mixture to pH 8 or more, then adding thereto an acid so as to adjust the resulting mixture to pH 6.5 or less to generate a precipitate containing at least said molybdenum and said A element, separating the precipitate from the liquid containing the precipitate, and forming a catalyst from the precipitate as a source material for said catalyst.

Claim 2 (Currently Amended): A process for producing a catalyst according to Claim 1, wherein the mixture before adjustment to pH 6.5 or less has an ammonium root in an amount of is 0.5 mole or more relative to mole of the A element.

Claim 3 (Original): A process for producing a catalyst according to Claim 1, wherein the whole or part of the X element is removed from the mixture before adjustment to pH 6.5 or less.

Claim 4 (Previously Presented): A process for producing a catalyst according to claim 1, wherein the precipitate is heat-treated at 200 to 700 C and then used as said source material.

Claim 5 (Original): A process for producing a catalyst according to Claim 1, wherein the used catalyst was, before the use, a catalyst for production of methacrylic acid by gas phase catalytic oxidation of methacrolein, having a composition represented by the following formula (1):

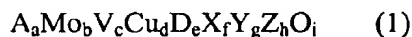


(wherein Mo, V, Cu and O are molybdenum, vanadium, copper and oxygen, respectively; A is at least one element selected from the group consisting of phosphorus and arsenic; D is at least one element selected from the group consisting of antimony, bismuth, germanium, zirconium, tellurium, silver, selenium, silicon, tungsten and boron; X is at least one element selected from the group consisting of potassium, rubidium and cesium; Y is at least one element selected from the group consisting of iron, zinc, chromium, magnesium, tantalum, manganese, cobalt, barium, gallium, cerium and lanthanum; Z is sodium and/or thallium; a, b, c, d, e, f, g, h and i are each the atomic ratio of each element; when b is 12, a=0.5 to 3, c=0.01 to 3, d=0 to 2, e=0 to 3, f=0.01 to 3, g=0 to 3, h=0 to 3, and i is the atomic ratio of oxygen necessary for satisfying the valency of each component other than oxygen).

Claim 6 (Currently Amended): A process for producing a catalyst according to Claim 5, wherein the mixture before adjustment to pH 6.5 or less has an ammonium root in an amount of is 0.5 mole or more relative to mole of the A element.

Claim 7 (Original): A process for producing a catalyst according to Claim 5, wherein the whole or part of the X element is removed from the mixture before adjustment to pH 6.5 or less.

Claim 8 (Previously Presented): A process for producing a catalyst according to Claim 1, wherein the produced catalyst is a catalyst for production of methacrylic acid by gas phase catalytic oxidation of methacrolein, having a composition represented by the following formula (1):



(wherein Mo, V, Cu and O are molybdenum, vanadium, copper and oxygen, respectively; A is at least one element selected from the group consisting of phosphorus and arsenic; D is at least one element selected from the group consisting of antimony, bismuth, germanium, zirconium, tellurium, silver, selenium, silicon, tungsten and boron; X is at least one element selected from the group consisting of potassium, rubidium and cesium; Y is at least one element selected from the group consisting of iron, zinc, chromium, magnesium, tantalum, manganese, cobalt, barium, gallium, cerium and lanthanum; Z is sodium and/or thallium; a, b, c, d, e, f, g, h and i are each the atomic ratio of each element; when b is 12, a=0.5 to 3, c=0.01 to 3, d=0 to 2, e=0 to 3, f=0.01 to 3, g=0 to 3, h=0 to 3, and i is the atomic ratio of oxygen necessary for satisfying the valency of each component other than oxygen).

Claim 9 (Original): A process for producing a catalyst according to Claim 5, wherein the produced catalyst is a catalyst for production of methacrylic acid by gas phase catalytic oxidation of methacrolein, having a composition represented by the formula (1).

Claim 10 (Previously Presented): A process for producing a catalyst according to Claim 1, wherein the recovery of molybdenum is 50 mass% or more and the recovery of the A element is 50 mass % or more.

Claim 11 (Original): A process for producing a catalyst according to Claim 9, wherein the produced catalyst gives a conversion of 90% or more relative to that of a virgin catalyst, a selectivity of 90% or more relative to that of the virgin catalyst and a per-pass yield of 90% or more relative to that of the virgin catalyst.

Claim 12 (Previously Presented): A process for producing a catalyst according to Claim 1, wherein the precipitate contains, as the main component, at least one selected from the group consisting of a salt of an X element of a Dawson type heteropolyacid containing at least molybdenum and an A element, an ammonium salt of a Dawson type heteropolyacid containing at least molybdenum and an A element, a salt of an X element of a Keggin type heteropolyacid containing at least molybdenum and an A element, and an ammonium salt of a Keggin type heteropolyacid containing at least molybdenum and an A element.

Claim 13 (Previously Presented): A process for producing a catalyst according to Claim 1, wherein a material other than the precipitate is used as a source material with the precipitate in forming the catalyst.

Application No. 09/926,553
Amendment under 37 CFR 1.312

DISCUSSION OF THE AMENDMENT

Claims 2 and 6 have been amended by deleting a superfluous "is", as a result of the Examiner's Amendment.

No new matter has been added by the above amendment. With entry thereof, Claims 1-13 will remain pending in the application.